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EXAMINER	
HUSON, MONICA ANNE	
ART UNIT	PAPER NUMBER
1791	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,364	HOOGLAND, HENDRICUS ANTONIUS	
	Examiner	Art Unit	
	Monica A. Huson	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-19 and 21-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-19 and 21-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Art Unit: 1791

DETAILED ACTION

This office action is in response to the RCE filed 26 December 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (U.S. Patent 6,439,871), in view of Eiji (JP 06-328489.

Regarding Claims 10 and 21, Saito shows that it is known to carry out a method for forming plastic products (Abstract), wherein in an entirely closed mold cavity an amount of plastic is introduced in substantially plastic condition (Column 4, lines 1-18), whereupon at least one moveable slide is moved at least partially into the mold cavity while compressing and/or displacing at least part of the plastic (Column 3, lines 30-38), wherein the speed of movement of the slide is sufficient to create adiabatic and frictional heat in the plastic, such that the temperature of the plastic rises to at least about the melting point of the plastic whereby the plastic becomes more liquid (Column 15, lines 14-17; it is being interpreted that since the speed of the pin can be varied based on the desired condition of the resin, it is implicit that Saito's disclosure would lead to varying the speed of the pin to achieve a more fluid resin). Saito does not explicitly state that the movement of the pin creates heat. Eiji shows a method wherein the movement of a protruding object into a mold cavity creates heat which creates a more fluid resin (Para. 0008). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Eiji's heat-creating step during the slide movement of Saito's molding process in order to efficiently fluidize the molding material in the desired locations.

Regarding Claim 19, Onishi shows that it is known to use an injection mold with at least one slide, while, during an injection molding cycle, the or each slide is moved in a mold cavity of the mold at a speed (Column 4, lines 47-65); It is noted that the remaining elements of the claim are considered to be only an intended use or consequence of the claimed method steps.).

Claims 11, 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito and Eiji, further in view of Onishi et al. (U.S. Patent 5,725,819).

Regarding Claim 11, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show setting a distance between the slide and the end of the cavity. Onishi shows a method wherein, prior to the introduction of the plastic into the mold cavity, the at least one slide is set at a passage distance, determined by the distance between one end, leading in the direction of movement, of the respective slide and an oppositely located wall part of the mold cavity, which distance is set on the basis of the melt of the plastic to be used in the mold cavity (Figures 4A-4C; Column 3, lines 54-60; Column 6, lines 34-45). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's distance determination method during Saito's molding process in order to provide the molding material the proper cavity dimensions for the good melt flow (i.e. good product achievement).

Regarding Claim 13, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show a particular time percentage for the slide movement. Onishi shows the process as claimed as discussed in the rejection of the respective independent claims above, including showing a time frame for his slide projection step (Column 4, lines 56-65; it is being interpreted that the slide movement time frame would implicitly be less than 20% of the total cycle time in order to conserve overall molding cycle time). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's slide movement time as that during Saito's molding process in order to reduce overall molding cycle time.

Regarding Claim 14, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show a particular time percentage for the slide movement. Onishi shows the process as claimed as discussed in the rejection of the respective independent claims above, including showing a time frame for his slide projection step (Column 4, lines 56-65; it is being interpreted that the slide movement time frame would implicitly be less than 3% of the total cycle time in order to conserve overall molding cycle time). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's slide movement time as that during Saito's molding process in order to reduce overall molding cycle time.

Regarding Claim 17, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, including varying the speed of the slide based on the desired fluidity of the molding resin (Column 15, lines 14-17), but he does not show the particular slide movement requirements. Onishi shows a method wherein as a thermoplastic is

introduced with feed pressure and speed while the or each slide is brought into the mold cavity (Column 4, lines 36-65; It is noted that the remaining elements of the claim are considered to be only an intended use or consequence of the claimed method steps.), and applying hold pressure (Column 4, lines 66-67).

Claims 12, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, in view of Rosato's Injection Molding Handbook (3rd ed.).

Regarding Claim 12, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show varying the passage distance when using a plastic with a higher melt. Rosato shows that it is known to vary the cavity size based on various parameters including material selection (Page 224). Rosato and Saito are combinable because they are concerned with a similar technical field, namely, methods of injection molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's varied passage distance during Saito's molding process in order to optimize the use of various molding materials.

Regarding Claim 15, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not disclose a specific closing pressure. Rosato shows that it is known to carry out a method wherein the closing pressure for a mold is smaller compared to conventional closing pressures (Pages 261-262). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's optimized closing pressure during Saito's molding process in order to reduce operating costs and increase efficiency of the process.

Regarding Claim 16, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not disclose a specific filling pressure. Rosato shows that it is known to carry out a method wherein the material is introduced into the mold cavity with a filling pressure of less than 350 bar (Page 224). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's filling pressure during Saito's molding process in order to most accurately and efficiently fill the mold cavity.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, in view of Hinduja et al. (U.S. Patent 5,424,017).

Regarding Claims 18 and 31, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show using an overflow cavity. Hinduja et al., hereafter "Hinduja," show that it is known to carry out a method

wherein in the or each mold cavity overflow spaces are provided which are filled with the plastic, wherein the parts filled in the overflow spaces are used as engaging elements for extracting a product formed in the respective mold cavity (Figure 2, element 18). Hinduja and Saito are combinable because they are concerned with a similar technical field, namely, methods of injection molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Hinduja's overflow cavities during Saito's molding process in order to avoid overfilling the cavity and producing a malformed article.

Regarding Claim 23, Saito shows the process as claimed as discussed in the rejection of Claim 22 above, but he does not show applying a hold pressure. Hinduja shows that it is known to carry out a method wherein said plastic is introduced into the mold cavity with an injection device via an inflow opening of the mold cavity, and wherein the method further comprises the step of applying a hold pressure with said injection device (Column 3, lines 15-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Hinduja's hold pressure step during Saito's molding process in order to prevent plastic from exiting said inflow opening of said mold cavity during the compression step.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saito and Eiji, further in view of Abe et al. (U.S. Patent 5,993,719). Saito shows that it is known to carry out a method for forming plastic products (Abstract), wherein in an entirely closed mold cavity an amount of plastic is introduced in substantially plastic condition (Column 4, lines 1-18), whereupon at least one moveable slide is moved at least partially into the mold cavity while compressing and/or displacing at least part of the plastic (Column 3, lines 30-38), wherein the speed of movement of the slide is sufficient to create adiabatic and frictional heat in the plastic, such that the temperature of the plastic rises to at least about the melting point of the plastic whereby the plastic becomes more liquid (Column 15, lines 14-17; it is being interpreted that since the speed of the pin can be varied based on the desired condition of the resin, it is implicit that Saito's disclosure would lead to varying the speed of the pin to achieve a more fluid resin). Saito does not explicitly state that the movement of the pin creates heat. Eiji shows a method wherein the movement of a protruding object into a mold cavity creates heat which creates a more fluid resin (Para. 0008). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Eiji's heat-creating step during the slide movement of Saito's molding process in order to efficiently fluidize the molding material in the desired locations. Saito does not explicitly show a filling step wherein the plastic does not completely fill the cavity. Abe et al., hereafter "Abe," show that it is known to

carry out a method wherein plastic is introduced into an entirely closed mold cavity, wherein the plastic does not completely fill the mold cavity (Column 7, lines 62-66; "just before" indicates that the plastic is not completely filled in the mold cavity), and then compressing the plastic so that it completely fills the cavity (Column 8, lines 12-16). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Abe's plastic volume control in order to avoid overfilling the mold and causing damage thereto or to the plastic article.

Claims 24, 26, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, Eiji, and Abe, further in view of Onishi.

Regarding Claim 24, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show setting a distance between the slide and the end of the cavity. Onishi shows a method wherein, prior to the introduction of the plastic into the mold cavity, the at least one slide is set at a passage distance, determined by the distance between one end, leading in the direction of movement, of the respective slide and an oppositely located wall part of the mold cavity, which distance is set on the basis of the melt of the plastic to be used in the mold cavity (Figures 4A-4C; Column 3, lines 54-60; Column 6, lines 34-45). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's distance determination method during Saito's molding process in order to provide the molding material the proper cavity dimensions for the good melt flow (i.e. good product achievement).

Regarding Claim 26, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show a particular time percentage for the slide movement. Onishi shows the process as claimed as discussed in the rejection of the respective independent claims above, including showing a time frame for his slide projection step (Column 4, lines 56-65; it is being interpreted that the slide movement time frame would implicitly be less than 20% of the total cycle time in order to conserve overall molding cycle time). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's slide movement time as that during Saito's molding process in order to reduce overall molding cycle time.

Regarding Claim 27, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show a particular time percentage for the slide movement. Onishi shows the process as claimed as discussed in the rejection of the respective independent claims above, including showing a time frame for his slide projection step (Column 4, lines 56-65; it is being interpreted that the slide movement time frame would

implicitly be less than 3% of the total cycle time in order to conserve overall molding cycle time). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Onishi's slide movement time as that during Saito's molding process in order to reduce overall molding cycle time.

Regarding Claim 30, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, including varying the speed of the slide based on the desired fluidity of the molding resin (Column 15, lines 14-17), but he does not show the particular slide movement requirements. Onishi shows a method wherein as a thermoplastic is introduced with feed pressure and speed while the or each slide is brought into the mold cavity (Column 4, lines 36-65; It is noted that the remaining elements of the claim are considered to be only an intended use or consequence of the claimed method steps.), and applying hold pressure (Column 4, lines 66-67).

Claims 25, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, Eiji, and Abe, further in view of Rosato's Injection Molding Handbook (3rd ed.).

Regarding Claim 25, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show varying the passage distance when using a plastic with a higher melt. Rosato shows that it is known to vary the cavity size based on various parameters including material selection (Page 224). Rosato and Saito are combinable because they are concerned with a similar technical field, namely, methods of injection molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's varied passage distance during Saito's molding process in order to optimize the use of various molding materials.

Regarding Claim 28, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not disclose a specific closing pressure. Rosato shows that it is known to carry out a method wherein the closing pressure for a mold is smaller compared to conventional closing pressures (Pages 261-262). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Rosato's optimized closing pressure during Saito's molding process in order to reduce operating costs and increase efficiency of the process.

Regarding Claim 29, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not disclose a specific filling pressure. Rosato shows that it is known to carry out a method wherein the material is introduced into the mold cavity with a filling pressure of less than 350 bar (Page 224). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use

Rosato's filling pressure during Saito's molding process in order to most accurately and efficiently fill the mold cavity.

Claims 23 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito, Eiji, and Abe, further in view of Hinduja.

Regarding Claim 23, Saito shows the process as claimed as discussed in the rejection of Claim 22 above, but he does not show applying a hold pressure. Hinduja shows that it is known to carry out a method wherein said plastic is introduced into the mold cavity with an injection device via an inflow opening of the mold cavity, and wherein the method further comprises the step of applying a hold pressure with said injection device (Column 3, lines 15-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Hinduja's hold pressure step during Saito's molding process in order to prevent plastic from exiting said inflow opening of said mold cavity during the compression step.

Regarding Claim 31, Saito shows the process as claimed as discussed in the rejection of the respective independent claims above, but he does not show using an overflow cavity. Hinduja shows that it is known to carry out a method wherein in the or each mold cavity overflow spaces are provided which are filled with the plastic, wherein the parts filled in the overflow spaces are used as engaging elements for extracting a product formed in the respective mold cavity (Figure 2, element 18). Hinduja and Saito are combinable because they are concerned with a similar technical field, namely, methods of injection molding. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Hinduja's overflow cavities during Saito's molding process in order to avoid overfilling the cavity and producing a malformed article.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Monica A Huson
Primary Examiner
Art Unit 1791

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